



## **EVZ Series (Small body) Explosion protected luminaire**

**IM0060 Ver. 2  
08/2012**



## **Operating Instructions**

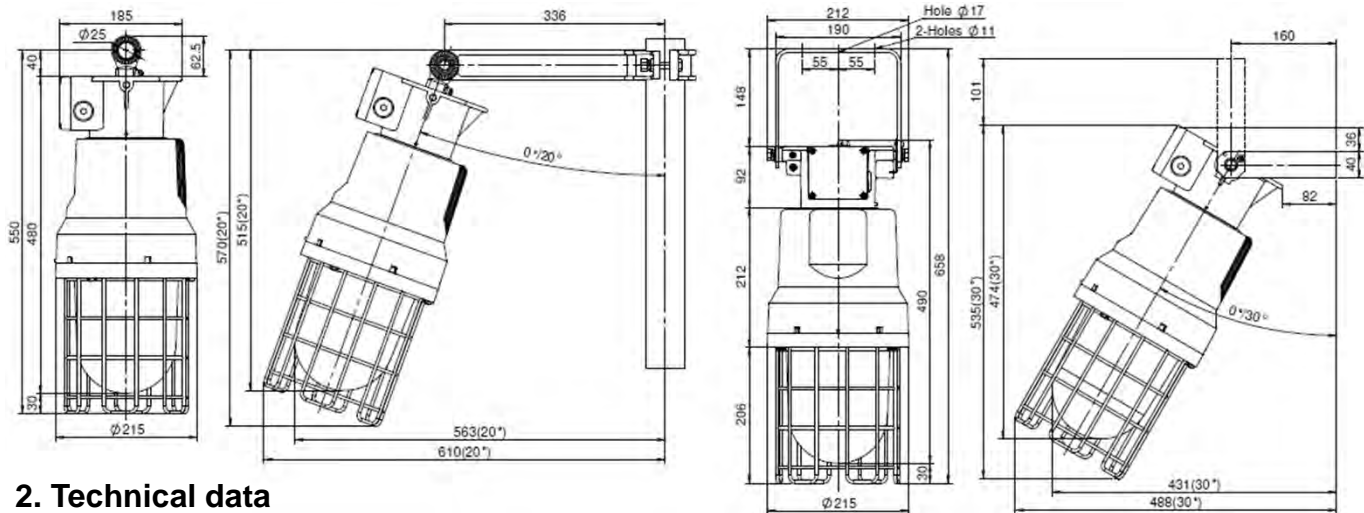
**COOPER** Crouse-Hinds

**Cooper Crouse-Hinds**

**Cooper Electronic Technologies (Shanghai) Co., Ltd.**

No. 955 Shengli Road,  
East Area of Zhangjiang High-Tech Park,  
Shanghai 201201  
China

## 1. Dimensions



## 2. Technical data

### Hazardous area specification

Type of protection:	Ex de (Flameproof, Increase Safety)
ATEX classification:	Group II Category 2 G
Certification Marking:	Ex II 2 G Ex d e IIC T...Gb
Ambient temperature:	-40°C~+55°C
Temperature class:	Refer to Type configuration
EC type examination Certification No.:	TÜV 11 ATEX 7092 X
IECEX Certificate No.:	IECEX CQM 11.0002
Degree of protection:	IP 66 acc. to EN60529/IEC60529
Approval of the production Quality assurance:	Baseefa ATEX 5952

### Enclosure specification

Material of enclosure:	Metal alloy aluminum without Cu
Finish:	Painted polyester power coat grey
Material of glass:	Tempered glass
Mounting plate:	Stainless steel or painted power coat
Fasteners:	All external fasteners stainless steel
Installation:	Mounting bracket with aiming quadrant
Weight:	Refer to Type Configuration.

### Entry specification

Indirect entry: 2 × M20 × 1.5 or 2 × M25 × 1.5 or 2 × NPT3/4" cable entry. One entry is fitted with an Exe stopping plug.

### Electrical specification

Wattage:	70W/100W/150W
Voltage:	220V/230V 50/60Hz, 240V 50Hz
Lampholder:	E27/E40
Insulation class:	I acc. to IEC60598
Terminals capacity:	3 or 6 core conductor/cable Solid: 0.5~6mm <sup>2</sup> Flexible: 0.5~4mm <sup>2</sup> /0.5~6mm <sup>2</sup>
Lamp:	High pressure Sodium/Metal Halide

## 3. Conformity with standards

This explosion protection luminaires meet the requirements of EN/IEC60079-0, EN/IEC60079-1, EN/IEC60079-7, It also complies with the EC Directives for "Apparatus and protective system for use in explosion atmospheres"(94/9/EC).

It has been designed, manufactured and tested in accordance to the state of the art and according to ISO 9001:2000.

The luminaires are suitable for use in explosive atmospheres, Zone1,Zone2 according to IEC60079-10-1

## 4. Safety Instructions



**This product should be installed, inspected, and maintained by a qualified electrician only, in accordance with national regulation, including the relevant standard and, where applicable, in acc. with EN/IEC 60079-17 on electrical apparatus for explosive atmospheres.**

**The national safety rules and regulations for prevention of accidents and the following safety instructions in these operating instructions, will have to be observed!**

- **The luminaires must not be operated in Zone0 and in Zone20!**
- **Before opening, electrical power to the luminaire must be turned off for at least 10 minutes!**
- **Do not install where the marked operating temperature exceed the ignition temperature of the hazardous atmosphere.**
- **Do not operate in ambient temperatures above those indicated on the luminaire nameplate.**
- **The luminaires shall be operated as intended and only in undamaged and perfect conditions!**
- **Keep tightly closed when in operation!**
- **The technical data indicated on the luminaires are to be observed!**
- **Change of the design and modifications to the luminaires are not permitted!**
- **Multiple, short-term switching must be observed!**
- **Only genuine Cooper Crouse-Hinds spare parts may be used for replacement!**
- **Repairs that affect the explosion protection, may only be carried out by Cooper Crouse-Hinds or qualified electrician!**
- **Do not keep these operating instructions inside the luminaires during operation!**

## 5. Field of Application

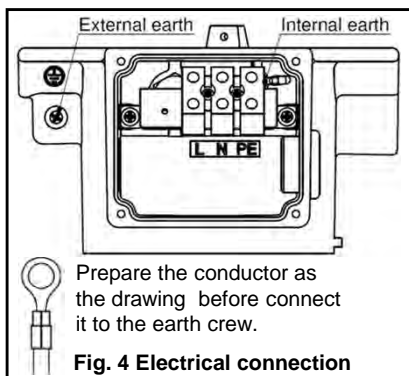
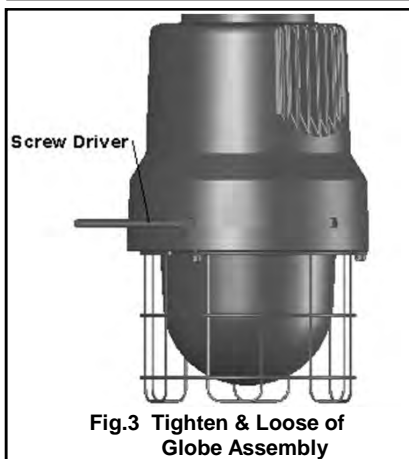
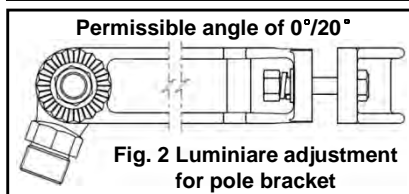
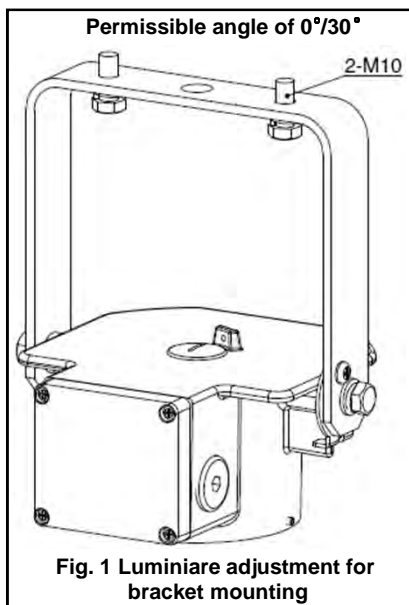
The ATEX category 2 G Luminaire with a separate Exe terminal box utilizes Exde protection and IP66 sealing making it suitable for use for potentially explosive atmospheres including ignitable gas and dust applications. The luminaire is designed for use in Zone1/Zone21 hazardous areas in indoors and outdoors in Marine and Wet locations, where moisture, dirt, corrosion, vibration and rough usage may be present.

Application ambient temperature is -40°C~+55°C. Refer to the luminaire nameplate for specific classification information, maximum ambient temperature suitability and corresponding operating temperature (T- Number).

The enclosure materials used, including any external metal parts, are high quality materials that ensure a corrosion resistance and resistance to chemical substances according to the requirements for use in a "normal" industrial atmosphere. In case of use in an extremely aggressive atmospheres, please refer to manufacture.

## 6. Type configuration

Std. Cat No.	Watt (W)	Lamp	Voltage	Lampholder	Without Reflector						With Reflector						Weight (Kg)
					T Class (Gas)			T °C (Dust)			T Class (Gas)			T °C (Dust)			
					+40°C	+50°C	+55°C	+40°C	+50°C	+55°C	+40°C	+50°C	+55°C	+40°C	+50°C	+55°C	
EVZIS*07***	70	HPS	220V 50Hz 230V 50Hz 240V 50Hz 220V 60Hz 230V 60Hz	E27	T5	T5	T4	83	93	98	T4	T4	T4	100	110	115	10
EVZIM*07***	70	MH		E27	T5	T5	T4	83	93	98	T5	T4	T4	93	103	108	10
EVZIS*10***	100	HPS		E40	T5	T4	T4	94	104	109	T4	T4	T4	110	120	125	11
EVZIM*10***	100	MH		E27	T4	T4	T4	97	107	112	T4	T4	T4	112	122	127	11
EVZIS*15***	150	HPS		E40	T4	T4	T4	113	123	128	T3	T3	T3	136	146	151	12
EVZIM*15***	150	MH		E27	T4	T4	T4	111	121	126	T3	T3	T3	133	143	148	12



## 7. Installation

### 7.1 General

The respective national regulations IEC/EN 60079-14 as well as the general rules of engineering which apply to the installation and operation of explosion protected apparatus will have to be observed!

**Do not install where the marked operating temperature exceed the ignition temperature of the hazardous atmosphere!**

**Do not operate in ambient temperatures above those indicated on the luminaire nameplate!**

**The improper installation and operation may result in the explosion protection and invalidation of the guarantee.**

### 7.2 Mounting luminaire

#### 7.2.1 Mounting the bracket

Only use the accompanying mounting bracket! Securely fasten the mounting bracket to a suitable base with sufficient load-bearing capacity. See Fig.1 and Fig.2 for detail.

#### 7.2.2 Adjustment of floodlight

Loosen the set screw and fixing screws to rotate the bracket to set the required tilt angle between 0° and 30° and 0° and 20° according to different mounting bracket. Re-tighten the set screw and fixing screws.

**The lamp must not be illuminated when at a distance of less than 0.5m from inflammable material.**

#### 7.2.3 Guard/Reflector installation

- Optional Reflectors
- Angle reflector RA725
  - Dome reflector RD725

The optional reflectors are attached to the luminaire as follows:

Loosen three screws on globe housing and Position reflector over globe. When correctly placed, three holes in reflector will match three holes on globe housing. Thread screws into globe housing.

**Note: The same screws are used to attach the reflector and guard. If they used together, the reflector must be installed first.**

### 7.3 Cable entries/blanking plugs

The "Increased safety (Exe)" properties must be preserved when, for example, using cables and wires of sufficient diameter. Unused holes shall be closed with a certified blanking plug in order to establish the Exe protection category.

The cable glands and blanking plugs should be Ex tD certified if the whole product is Ex tD certified also. The authoritative mounting guidelines for the cable glands used must be observed. Mounting the selected cable entries (cable glands) acc. type and dimensions of the main connection cable. Following their manufacturer instructions.

### 7.4 Opening/closing the luminaire

#### 7.4.1 General

**The opening of luminaire always shall be without voltage!**

**All gasket seals must be clean and undamaged before closing the luminaire.**

**Make sure the luminaires is well closed before operation!**

**There are Exd thread joints between the housing and the globe and between the housing and top hat!**

**Top hat has been fixed to the housing by the manufacturer before delivery, and the Exd thread joint has been tightened by the set screw which is not permitted to be loosen by the user.**

#### 7.4.2 Terminal cover

Unscrew the screws and remove the terminal compartment cover.

Carry out the steps in reverse order to close the luminaire.

Check all screws to ensure a secure fit (Torque for screws: 1.5 Nm).

#### 7.4.3 Globe

Loosen the set screw in the ballast housing and unscrew the globe from ballast housing.

To ensure that the globe assembly is in-line with the ballast housing, rotate the globe assembly through 180° anti-clockwise in order to accurately line up the threads, then thread globe assembly onto ballast housing until assembly seats firmly against O-ring. Tighten the set screws to secure globe housing.

**Note: If globe assembly resists turning, insert a straight blade screwdriver in jacking slot and pry loose (see Figure 3).**

### 7.5 Electrical connection

**The electrical connection of the lamp must only be established by qualified electricians. Make sure the supply voltage is the same as the luminaire voltage!**

**Use proper supply wiring as specified on the nameplate of the luminaire and in this instructions!**

**Excessive tightening may affect or damage the connection.**

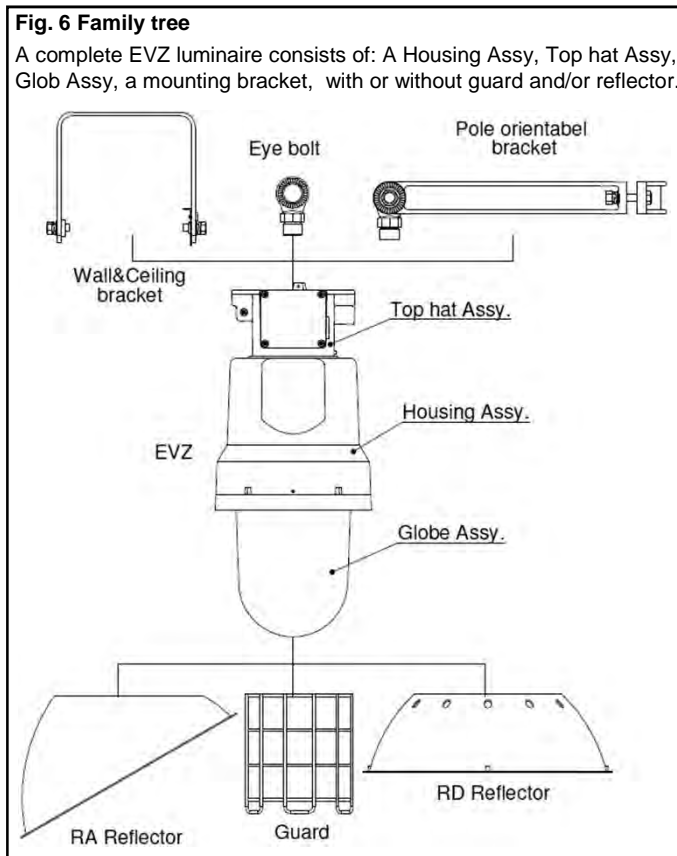
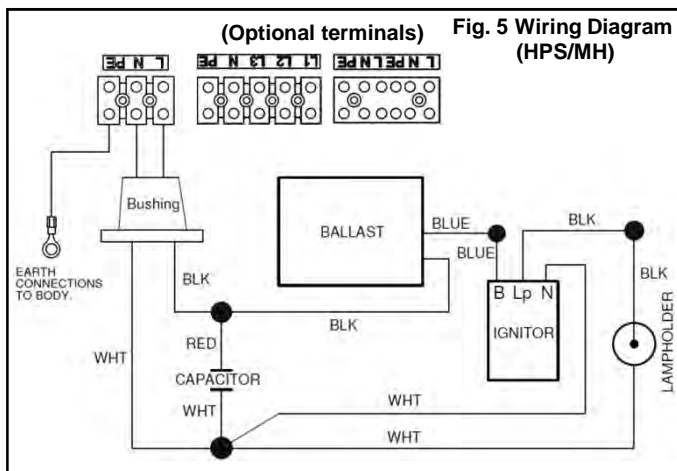
See section 7.4 for notes on opening and closing the luminaire. Connect cable according to the terminal numbering and circuit diagram.

The conductors shall be connected with special care in order to maintain the explosion category. Leads connected to the terminals shall be insulated for the appropriate voltage and this insulation shall extend to within 1mm of the metal of the terminal throat.

The conductor itself shall not be damaged.

The connectible min. and max. conductor cross-sections shall be observed (see technical data). All terminal screws, used and unused, shall be tightened down to between 1.2~2Nm for MK/6 and 0.5~0.7Nm for BK.

Main connection: See wiring diagram.



## 7.6 Lamp mounting

**Only must be mounting appropriated lamps for the supplied luminaire see indications on the nameplate of the luminaire and in this instructions!**

See section 7.4 for notes on opening and closing the luminaire. The lamp must be screwed tightly into the lampholder. Ensure it is screwed in fully so that no sparks or other unauthorized operating states may occur. Protect the glass on the lamp from breaking when screwing in.

## 8. Putting into operation

Prior to putting the apparatus into operation, the tests specified in the relevant national regulations shall be carried out. Insulation measurements may only be carried out between PE and the external conductor L1 (L2, L3) as well as between PE and N.

- Measurement voltage: Max. 1 kV AC/DC
- Measurement current: Max. 10 mA
- The luminaire may only be operated when closed.

## 9. Maintenance/Serviceing

### 9.1 General

The relevant national regulations which apply to the maintenance/servicing of electrical apparatus in explosive atmospheres, shall be observed (EN/IEC 60079-17).

The interval between maintenance depends upon the ambient conditions and the hours of operation. The recommendations given within EN/IEC 60079-17 for recurring checks must be observed.

### 9.2 Checks

During maintenance, the parts affecting the level of protection must be checked in particular:

- Enclosure and glass for cracks and damage.
- Seals for damage.
- Terminal, screw glands and blanking plugs for secure fitting.
- The flameproof joint have to be clean undamaged, without corrosion and perfect greased.
- To maintain the light output, clean the protective glass and reflector periodically with a damp cloth or a mild cleaning fluid.
- If this product is used in the combustible dust area, outside of enclosure must be cleaned on a regular basis to prevent accumulation of dust.

**Cleaning the rests of grease and corrosion do not use sharp metallic devices that can damage the threads of the joint, and greasing them using appropriate grease terminally and chemically stable with a drop point  $\geq 200^{\circ}\text{C}$  like e.g.: HTL lubricant from Cooper Crouse-Hinds!**

**When the housing need to be repainted, pay attention that the flameproof joints test without any part with coating!**

### 9.3 Lamp change

The suggested interval between lamp changes given by the lamp manufacturer should be followed.

Disconnect power to the luminaire and allow the luminaire to cool completely.

See section 7.4 for notes on opening and closing the luminaire. If the luminaire was previously in operation then wait 10 mins. before opening. Ensure that no hazardous atmosphere is present.

See section 7.6 for notes on inserting the lamp.

## 10. Repair/Overhaul/Modifications

### 10.1 General

**The national regulations ENIEC60079-19 have to be observed!**

**Repairs and overhaul may only be carried out with genuine Cooper Crouse-Hinds spare parts.**

Before replacing or disassembling individual parts, observe the following:

**Disconnect the power supply to the equipment before maintenance/repair.**

**Make sure that there is no explosive atmosphere when opening the equipment.**

See section 7.4 for notes on opening and closing the luminaire.

**Only use original spare parts.**

**If the luminaire was previously in operation then wait 10 mins. before opening.**

**Repairs that affect the explosion protection, may only be carried out by Cooper Crouse-Hinds or a qualified electrician in compliance with the applicable national rules.**

**Modifications to the device or changes to its design are not permitted.**

**After carrying out repair or overhaul work, ensure that the "Exde" properties have not been affected.**

Assistance may also be obtained through Cooper Electronic Technologies (Shanghai) Co., Ltd. Sales Service department, 955 ShengLi Road, Pudong Shanghai 201201.

Phone (86) 21-28993600

## 11. Disposal/Recycling

When the apparatus is disposed of, the respective national regulations on waste disposal will have to be observed.

**TÜV 11 ATEX 7092X**

**Wir / we / nous**

**Cooper Electronic Technologies (Shanghai) Co., Ltd.  
No. 955 Shengli Road,  
East Area of Zhangjiang High-Tech Park,  
Shanghai 201201  
China**

erklären in alleiniger Verantwortung, dass die  
*hereby declare in our sole responsibility, that the*  
*déclarons de notre seule responsabilité, que le*

*HID Luminaires*

 **II 2 G Ex d e IIC T... Gb**

**Type EVZ...**

auf die sich diese Erklärung bezieht, mit den folgenden Normen oder normativen Dokumenten übereinstimmen.  
*which are the subject of this declaration, are in conformity with the following standards or normative documents.*  
*auquel cette déclaration se rapporte, est conforme aux normes ou aux documents normatifs suivants.*

Bestimmungen der Richtlinie  
Terms of the directive  
Prescription de la directive

Titel und / oder Nr. sowie Ausgabedatum der Norm.  
Title and / or No. and date of issue of the standard.  
Titre et / ou No. ainsi que date d'émission des  
normes.

94/9/EG: Geräte und Schutzsysteme zur bestimmungs-  
gemäßen Verwendung in explosionsgefährdeten  
Bereichen.

**EN 60079-0: 2009  
EN 60079-1: 2007  
EN 60079-7: 2007**

94/9/EC: Equipment and protective systems intended for  
use in potentially explosive atmospheres.

94/9/CE: Appareils et systèmes de protection destinés à  
être utilisés en atmosphère explosibles.

2004/108 EG: Elektromagnetische Verträglichkeit  
2004/108 EC: *Electromagnetic compatibility*  
2004/108 CE: *Compatibilité électromagnétique*

**EN 61000-6-4: 2007  
EN 61000-6-2: 2005  
EN 55015: 2006+A1: 2007+A2:2009  
EN 61547: 1995+A1: 2000**

Shanghai, 2012.08.06

*Place and date*

*Head of quality department*

*Head of approval office*

**QAN: Baseefa ATEX 5952**

Zertifizierungsstelle  
*Notified Body of the certification*  
*Organes Notifié et Compétent*

**TÜV (0035)  
Am Grauen Stein, 51101 Köln**

Konformitätsbewertungsstelle  
*Notified Body to quality evaluation*  
*Organes d'attestation de conformité*

**Baseefa LTD (1180)  
Rockhead Business Park, Staden Lane,  
Buxton, Derbyshire SK17 9RZ**

Für den sicheren Betrieb des Betriebsmittels sind die Angaben der zugehörigen Betriebsanleitung zu beachten.  
*For the safe use of this apparatus, the information given in the accompanying operating instructions must be followed.*  
*Afin d'assurer le bon fonctionnement de nos appareils, prière de respecter les directives du mode d'emploi correspondant à ceux-ci.*